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THE
BOSTON MEDICAL AND SURGICAL
JOURNAL.

VOL. X.] WEDNESDAY, FEBRUARY 12, 1834. [NO. 1.

ESSAY ON AFFECTIONS OF THE BLADDER IN PARAPLEGIA.

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THE anatomy and physiology of the nerves have been so successfully investigated of late years, that an opportunity is afforded of explaining many of the complicated phenomena of disease, by a consideration of the functions of this intricate system.

I propose in this essay to endeavor to account for certain symptoms observed under circumstances of privation of nervous influence, of which I am not aware that any satisfactory explanation has yet been offered.

It is now generally admitted, that after injuries of the spine, death is frequently occasioned by disease in the urinary bladder, accompanied by an ammoniacal condition of the urine. The same has been observed in paraplegia arising from other causes, as ramollissement of the medulla spinalis,* or tumors in the spinal canal. Mr. H. Cline invariably found, after paraplegia had been produced by the injuries he inflicted on the spinal marrow of dogs, that the bladder became affected.

The object, then, of my inquiry, is to ascertain whether the disorganization of the bladder, and alkaline condition of the urine, after injuries and diseases of the spinal cord causing paralysis, are dependent upon the loss of nervous influence.

The explanation which has been given by many surgeons is,† that "in consequence of the bladder having lost its nervous energy, the urine becomes decomposed in that organ, as it does after it is voided under ordinary circumstances, and thus acts as an irritant on the mucous coat." This exposition, I think, admits of question, since we have no evidence whatever that mucous membranes exert any influence over the fluids which are in contact with them, otherwise than through the medium of their secretions, or by absorption; nor is there any apparent necessity for the bladder possessing the property of preventing decomposition of the urine. The different parts of the animal machine, although often beautifully accommodating themselves to altered conditions, are still intended for existence in a healthy, not in a diseased state: hence, when the functions of the bladder are unimpaired, if its contents should remain sufficiently long to become decomposed, there is a stimulus to evacuation, and the urine is expelled. That the urine may, and frequently does, become decomposed from long continuance in the bladder, is sufficiently obvious; for when it is relieved in cases of retention of urine, or enlargement of the prostate gland, a strong ammoniacal odor is often emitted.

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* Brodie on the Urinary Organs, p. 161.

† Cooper's Lectures, by Tyrrell, vol. ii.

The bladder is supplied with nerves from two sources—from the sympathetic system, and from the medulla spinalis; the former is said to furnish it with its involuntary, and the latter with its voluntary powers. But the spinal cord is also the source from whence the nerves communicating sensibility to the bladder are derived; for when the medulla spinalis is injured, not only is the voluntary power lost, but the sensibility of its mucous surface is destroyed. Bichat has observed, that "every part of the mucous system bears a certain relation to the fluid which habitually covers it, and could not bear the contact of others without pain;" from which it is evident, that the sensibility of mucous membrane, like every tissue and organ in the human body, differs in kind and degree according to the necessity of the part. As other structures, then, the bladder possesses its own appropriate sensibility—a sensibility which is the cause of contraction when the viscus is distended, or its contents are hurtful and irritating, and which is excited by the presence of a foreign body. This sensibility, however, is influenced very much by habit, which constantly tends to render the sensations less lively.

Sir C. Bell has beautifully shown, that sensibility is eminently essential to the preservation of the healthy condition of different structures; therefore, however perfect the voluntary powers may remain, when the susceptibility to the impression of pain is lost, parts are constantly exposed to injury. If the delicate sensibility of the conjunctiva of the eye be destroyed, by dividing the fifth pair of nerves, particles coming in contact with this membrane produce excitement, giving rise to a blush of redness; but the muscles of the lids are not called into action to remove the offending substance, so that inflammation, eventually destructive to vision, is the consequence. When the nostril has lost its sensibility from an affection of the fifth pair, sneezing cannot be excited. When the sensibility of the tongue and cheek is destroyed, the morsel is permitted to remain in the mouth until it actually becomes offensive, although the motions both of the tongue and cheek remain unimpaired. If, therefore, the sensibility of the bladder be destroyed, when it becomes distended, or the urine is highly acrid, there is no stimulus to induce it to contract and expel its contents; consequently, however perfect the muscular power may be, it is rendered constantly liable to suffer from over-distension, and the injurious effects of urine possessing acrid properties, which properties frequently become still more irritating, in consequence of the urine being allowed to remain a sufficient time in the bladder to become decomposed.

Should, however, the sensibility of the bladder remain, but its muscular power be paralyzed, as is not unfrequently seen, inasmuch as it is sensible to injurious impressions, and consequently recourse is immediately had to art to relieve it, so under these circumstances it is seldom observed to suffer.

In order to contrast still more strongly the phenomena resulting from the loss of sensibility on the one hand, and the loss of voluntary power on the other, I will refer to two exceedingly interesting cases recorded in the Medico-Chirurgical Transactions. One is a curious instance of anæsthesia, described by Dr. Yelloly, formerly physician to the London Hospital, in which the patient, a man 58 years of age, entirely lost the sensation both of the upper and lower extremities, at the same time that he possessed a perfect power over the muscles. The other is an extraordinary case of the loss of voluntary power, detailed by Dr. Bostock.

A man between 40 and 50 years of age gradually lost voluntary power, first over one lower extremity, then over the other; his hands and arms were subsequently affected in a similar manner. He then became unable to articulate properly, and was soon entirely deprived of speech; he lost completely the power over the muscles of the neck and the lower jaw, and deglutition also was considerably affected; his head always fell upon his chest, unless artificially supported; there was a constant flow of saliva from his mouth; he was frequently almost suffocated with mucus, or convulsed with ineffectual attempts to expel it. And yet, notwithstanding this loss of power over nearly all the voluntary muscles of the body, but few of the functions were interrupted; there was no numbness or insensibility of any part, either to mechanical impressions or to changes of temperature, and all the external senses remained uninjured to the last; whereas, in the first case, in consequence of the loss of sensibility, the patient was constantly exposed to accidents, receiving blows, suffering from pressure, placing his feet in boiling water; and it is related, that his hands were never free from blisters, which he got by inadvertently putting them too near the fire.

Hence, then, I would *partly* explain the affection of the bladder in these cases, upon the same principle that, in cases of insusceptibility of the lower half of the body, it is almost impossible to prevent inflammation terminating in mortification of the parts subjected to pressure in lying.

It is admitted that the nervous influence powerfully affects the function of secretion. When the eighth pair of nerves is divided, the stomach cannot secrete the gastric juice, so that food subsequently taken remains undigested; and in a rabbit upon which the experiment was made, the animal went on eating parsley until its stomach was gorged, because it was not conscious either that sufficient food was received to satisfy the calls of hunger, or that the viscus was replete.

In cases of stone, the vessels of the mucous membrane at the neck of the bladder are stimulated to increased secretion, in order to protect its surface from the irritation of a foreign body. But when the influence of the medulla spinalis is cut off from the bladder, the secernent function of its mucous surface becomes impaired, so that mucus, which is its natural defence from the acrid properties of unhealthy urine, is not duly secreted for that purpose.

We are as yet unacquainted with the nature of the influence of the nerves upon secretion. When the conjunctiva is irritated by particles of dust, there is increased secretion of the lachrymal gland. When the sense of taste is excited by food in the mouth, the saliva becomes more abundant; but if the fine sensibility of the conjunctiva and the sense of taste are wanting, these effects are not produced. May not, therefore, the privation of the secretion of the gastric juice, when the eighth pair of nerves is divided, be attributed to the insensibility of the stomach to the presence of food? Also, when the fifth nerve is divided, may not the cause of inflammation of the conjunctiva be partly ascribed to a deficiency of tears, and of its natural secretion, so necessary for the protection of this membrane, in consequence of its insensibility to the presence of irritating particles? If, then, the sensibility of the mucous membrane of the bladder be lost, the medium of communication to determine the necessity for an increased secretion is destroyed: hence, if even it be allowed that in paralysis the secernent power of the capillaries is unimpaired, as there is no stimulus to excite secretion, so that function is not performed, for the same reason that in paraplegia the voluntary power over the bladder is lost, not in consequence of the muscular fibres being rendered incapable of contracting, but because the means of communicating the necessary stimulus is wanting.

I have endeavored to show, that when the urinary bladder is deprived of the nervous influence which it receives from the medulla spinalis, the natural stimulus to evacuation being lost, it is constantly subject to the injurious effects of over-distension, the acrid properties of unhealthy urine, and the frequent irritation of a catheter: there is a deficiency of the natural secretion necessary for its protection: under such a combination of unfavorable circumstances, it certainly is not surprising that the bladder should almost uniformly become diseased. It appears, therefore, that a variety of causes constantly tend to irritate and excite inflammation in the bladder when it is thus partially deprived of its accustomed nervous influence.

The morbid appearances presented by the bladder after death are—apparent increased vascularity of the mucous membrane, which is generally of a dark or grey color; and sometimes patches of red are observed upon it, which, when closely inspected, are seen to be composed of vessels minutely injected; flakes of lymph are found adhering to its surface, often also a ropy mucus, containing a white powder, possessing alkaline properties. Sloughing of the mucous membrane has also been observed; the urine remaining in the bladder is generally excessively offensive, and a muco-purulent fluid is frequently mixed with it. There is effusion into the sub-mucous cellular tissue, and the bladder has sometimes been found ulcerated. Mr. Swan possesses a bladder taken from a patient who died after a fracture of the spine, where a perforation through the coats into the cavity of the peritoneum had been made by ulceration.

I will next consider the alkaline property of the urine existing in these cases. Is it the *cause* or the *consequence* of the diseased condition of the bladder? Every one who has read the able treatise of Dr. Prout on Urinary Affections, will recollect the remark, "that a large proportion of the cases of deposition of the earthy phosphates which have come under his observation, has been distinctly traced to some injury to the back;" and in a note he informs us that he has frequently observed jaded and worn-out horses pass great quantities of lime in their urine; and he has known the same also to take place in dogs, particularly of the sporting kind: and in both these instances he has thought it probable that the circumstance was connected with some strain or injury of the back, produced by over-exertion, or other causes. Mr. Earle has written a paper, in the 11th volume of the Medico-Chirurgical Transactions, in which he has attempted to show that the formation of renal calculi is frequently caused by a local injury to the loins and kidney. I have no doubt but that a local injury to the kidney, by exciting inflammation in that organ, may be the cause of urine possessing alkaline properties being secreted, or that the same property may be communicated to the urine by morbid secretions from the kidney ; but it is evident that the alkaline urine so generally observed after fractures of the spine, is not to be attributed to any injury to this gland, for, as Mr. Brodie has observed, " it is remarkable that this effect is equally produced whatever is the part of the spine that is injured, whether it be the loins, or the back, or the neck ; " and as I have already said, it is found in paralysis resulting from disease in the medulla spinalis. In the examination after death of two patients who died in this hospital after fracture of the spine, I found no perceptible deviation from natural structure in the kidneys. Mr. T. H. Smith, in some remarks on this subject, does not dissent from the most general opinion as to the cause of the affection of the bladder, but merely as to the source of the altered state of the urine ; for, he says, that it is " a matter of demonstration, that in cases of injuries to the spine producing paraplegia, urine is constantly arriving ammoniacal in the bladder." This view is supported by the following experiment, in a case of fracture of the seventh cervical vertebra :—" The urine was observed to be highly ammoniacal when drawn off, the bladder was then washed with warm water, injected and withdrawn till no trace of ammonia could be perceived : a small portion of clear water was then thrown in, and permitted to remain for some time ; and on removing it, decided traces of ammonia were perceptible. Sufficient time not being given for decomposition, it is evident the urine arrives ammoniacal from the kidneys." This experiment, I think, by no means warrants the strong conclusion that has been drawn from it. An alkaline property might certainly be derived from some other source than from the kidneys ; as, for instance, from the mucous membrane of the bladder : the alkaline matter contained in the thick, tenacious mucus, adhering to its internal surface, whilst the water was retained for some time, might become dissolved or suspended in the fluid, and thus impart an alkaline property : or, again, the fixed alkali contained in the secretions of the bladder might, as explained by Dr. Prout, produce decomposition of the urea, and thus the ammoniacal condition of the urine would be accounted for. I by no means, however, deny the possibility of urine coming ammoniacal from the kidneys ; for when the coats of the bladder are extensively diseased, the kidneys generally participate in the affection.

I believe, then, that the alkaline property of the urine in these cases, is originally dependent upon the diseased state of the bladder, as in ordinary chronic inflammation, where the mucus, which is abundantly secreted, is highly alkalescent, under which circumstances the urine would become decomposed, or acquire similar properties ; but as a secondary cause, in consequence of the febrile excitement of the system, and debility which takes place after these severe injuries, as well as of the extension of inflammation along the mucous lining of the ureters, the kidneys also become liable to secrete alkaline urine, in which case containing the triple phosphate, and therefore rendered more stimulating than healthy urine, when arrived at the bladder, it would tend to keep up and aggravate the inflammation already existing in its unprotected mucous surface.

Perhaps in some of the cases of alkaline deposition alluded to by Dr. Prout, the state of the urine might be attributed to the strain or injury of the back affecting the medulla spinalis, and thereby impairing the sensibility of the bladder, which would probably lead to chronic inflammation being excited.

The conclusions which the present inquiry has led me to form are, 1. That the morbid state of the bladder so generally observed after injuries and diseases of the spine, causing paraplegia, results from the loss of the natural sensibility of its mucous surface. 2. That the alkaline condition of the urine is produced primarily by the morbid secretions of the bladder, and secondarily by the altered secretion of urine arising from a debilitated and irritable state of the system, or a sympathetic affection of the kidneys.

As the chances of a favorable issue in these important cases must be considerably diminished by so serious an affection of the bladder, the practical application of the inferences resulting from this investigation merits the best attention. It must be confessed, however, that after a fracture of the spine, but slender expectations can be entertained of any permanent benefit, even by the most skilful treatment, and little more can be effected than a mitigation of the symptoms, or protraction of a fatal termination. I would suggest, notwithstanding the susceptibility of the bladder, when deprived of its sensibility, to the injurious effects of a foreign body, that as a lesser evil the gum elastic catheter should constantly be retained in the bladder, and the urine drawn off at least six times in the twenty-four hours. If the urine appears acrid, it would be advisable to inject the bladder with warm water, or some mucilaginous liquid, as a substitute for its natural secretion; and when inflammation is established, and the urine is decidedly alkaline, I would exhibit acids internally, and make trial of Mr. Brodie's recommendation of injecting the nitric acid duly diluted.—*London Medical Gazette.*

EMPYEMA.

Cases of Empyema, with Practical Remarks. By J. A. ALLEN, M.D. of Middlebury, Vermont.

[Communicated for the Boston Medical and Surgical Journal.—Continued from Vol. VIII. p. 314.]

CASE VII.—Miss Maria Cooke, aged 16 years, daughter of Mrs. H. B. Cooke, the learned principal of the Middlebury Female Seminary, was suddenly attacked March 22nd, 1831, with a severe chill, difficult respiration, excruciating pain in the left side of the thorax, and in the head. She had, at times, for several days past, experienced severe paroxysmal darting pains of the head, face, and chest, which were unquestionably neuralgic. She had also recently had Rosalia *simplex*, or it might have been a mitigated variola or varioloid, as she had been exposed to variolous infection, from which several persons who had previously had the kinepox had experienced the varioloid.

On her present attack, medical aid was speedily called. A potion of ipecacuan and calomel was administered, which produced an emetic and cathartic effect. She was then covered warmly in bed, and some diaphoretic administered. On the 24th she was bled eight or ten ounces.

March 25, I saw her in consultation. At this time her skin was hot and dry; pulse 135 per minute, *small* and *contracted*; respiration laborious; pain in the left side above the false ribs severe. By auscultation, no respiratory murmur could be discovered in any part of this side. The respiratory crepitus in the right lung, accompanied with an indistinct mucous rattle. Cough little or none.

Diagnosis.—Sub-inflammation of the pleura of the left side and of the parenchyma of the lung of this side, and probably congestion.

Mem.—Venesection in small quantity; if any relief be obtained from it, the operation is to be repeated. Fomentations to the chest. An epispastic to be applied on the left side over the most painful part. Alterative doses of calomel, opium, and a minute quantity of tartarized antimony, to be alternated with tincture of digitalis every two hours.

26th.—Symptoms slightly mitigated. Has had about twenty ounces of blood taken.

Mem.—Continue the same internal remedies. Mucilaginous drinks.

27th.—No essential change in the symptoms.

Mem.—The same internal remedies continued. Let one or two cupping glasses be applied to the left side of the thorax, and after this operation apply an epispastic.

28th.—Symptoms mitigated; pulse 120 per minute; skin moist; respiratory crepitus distinct in the bronchiæ of the left lung. In the right, the respiratory murmur is more natural. Coughs some. Expectoration tinged with blood, small in quantity.

April 2nd.—She has taken for two days past, every two hours, a pill composed of one half a grain of sulphate of quinine, one fourth of a grain of opium, and two grains of capsicum. Brandy frequently repeated. Her pulse at this time numbered 130 a minute. Her skin is hot and dry; she is very feeble; recumbency on the right side greatly aggravates the difficulty of respiration. Expression of the countenance anxious. Percussion on the left side of the thorax gives a dull sound, and no respiratory noise can be detected in any part of this side of the chest. 2

Diagnosis.—There is effusion into the cavity of the left side of the chest, and some affection, or difficulty, in the substance of the lung, sufficient perfectly to prevent an inspiration or use of this lung. The effusion may be aqueous, sero-purulent, or real pus; the true character of which cannot with certainty be determined. From the preceding symptoms, however, it may rationally be inferred that it is a purulent accumulation.

Mem.—To obviate the difficulty of breathing and to promote absorption of the effused fluid, give an emetic of sulphate of copper and ipecacuan; after its operation, give tincture of digitalis in doses of twenty drops every eight hours. Continue the tonic pill; give stimulants as circumstances require; apply an epispastic to the back part of the left side of the thorax.

April 7th.—For a time the emetic diminished the difficult respiration, but, at present, all the symptoms are more aggravated. By measurement, the left side of the chest is an inch further from the spinous processes of the back to the centre of the sternum, than the right. There is no separation of the ribs. The heart is pressed into the right side of the thorax, which is shown by its action there. She is very much exhausted. Indeed, such was her general prostration, that an operation for empyema, which it was evident offered the principal, if not the only chance of relief, was omitted.

Mem.—To promote absorption, and to check the continual accumulation in the chest, give sufficient sulphate of copper and ipecacuan to provoke a gentle emetic operation. Subsequently, to accomplish the same object, give a pill composed of *calomel gr*. 1-3, *digitalis* and *squills* āā *gr. j.* every eight hours. Apply an epispastic to the left side. *Diet, tonics* and *stimulants* as circumstances may require.

April 16th.—Since the last report there has been a gradual failure. The respiration is exceedingly laborious, even when she lies on her left side. During each inspiration she makes great exertion, and raises her right shoulder very much. The pulse 130 a minute. With the cylinder, no respiration can be discovered in the left side of the thorax, and in the right side there is no respiratory crepitus below the nipple. She died on the 17th.

Autopsy on the 18*th.*—The left cavity of the thorax contained, at least, three pints of pus. The lung of this side was nearly all destroyed by the process of ulceration. The pleura-costalis was covered with a white coat, or adherent pus-like matter. Through its whole extent, the pleura appeared to have assumed the ulcerative action. The pericardium was partially filled with a semi-purulent fluid. The right cavity of the thorax contained no effusion. The lung of this side next to the diaphragm was surcharged with blood so much as to render it obviously impervious to the air. The abdominal viscera presented no morbid appearances.

Practical Remarks.—Dr. Cullen regarded empyema as a mere sequel of pneumonia, which with him included inflammation of the lungs as well as of the pleura; and Dr. Good includes inflammation of the mediastinum, pericardium and diaphragm, exclusive of external injuries, as causes of empyema. The destruction of the lung in the case of Miss Cooke must have required some other process than simple inflammation. It was destroyed, Galen would have said, by *errosion*. Mr. J. Hunter, however, who first directed the attention of physicians to this interesting subject, has with propriety denominated the process *ulcerative inflammation*. "The process," says he, "of ulceration or absorption, with suppuration, is almost constantly attended by inflammation; but it cannot be called an original inflammation, but a consequent, which gave rise to the term *ulcerative inflammation*." "This event," Dr. Thompson remarks, "in all parts of the body is preceded by a certain degree of inflammation, and this inflammation is usually of the adhesive kind, but ulcerative absorption may supervene in parts affected with suppurative or gangrenous inflammation." Mr. Brodie, in his treatise on the joints, has advanced a somewhat different explanation. "Ulceration of the cartilage," he observes, "may be the consequence of inflammation of the cartilage itself, or of the bony surface to which it is connected; but in many instances there is no evident marks of inflammatory action having preceded it either in one part or the other, and the inflammation, which afterwards takes place, appears to be rather the attendant on, than the cause of ulcerative process." This opinion of Mr. Brodie, founded upon the fact that "no evident marks of inflammatory action have preceded" the ulceration, rests upon unsatisfactory evidence. It is obvious, that in some tissues of the body, all traces of inflammation may be lost before the affected part would be subjected to ocular inspection. That ulceration, as well as suppuration, is always a sequence of inflammation, is certainly more in accordance with universal analogy, which exists in the animal economy, than the views taken of this subject by Mr. Brodie.

In the unfortunate case which is the subject of these remarks, it is evident there must have been adhesive, suppurative and ulcerative inflammation. If there had been no adhesion of parts, there must have been expectoration of pus and hemorrhage. What but the process of adhesive inflammation could have united the surfaces of the bronchial tubes so closely as to prevent the accumulated pus from being in some degree removed by expectoration? And, what else but a closure of the pulmonary arteries by adhesive inflammation, prevented a fatal internal hemorrhage? The production of so large a quantity of pus, the destruction of the lung, the adhesion of the calibres of the bloodvessels and bronchial tubes, it would seem, were sufficient to establish the phlogistic character of the complaint beyond a question, whatever might have been the symptoms at the onset. At this period, and, indeed, throughout the whole duration of the disease, the essential characteristics of sub-acute pneumonia were present. There were, however, some equivocal symptoms. The pulse was *frequent* and *contracted*. Frequency of pulse, although subject to exceptions, generally indicates a morbid irritability or exhaustion of vital energies. So commonly does a frequent pulse denote exhaustion, that it has been said by a learned and experienced American writer, that "a frequent, quick, small and hard, or wirey pulse, though too frequently considered as indicating a phlogistic state, denotes nothing more than the addition of irritation to exhaustion."

The frequency of the pulse may be varied by so many causes, that after all our pathological and physiological improvements, it must be admitted there is much truth in the decision of Celsus, that abstractly considered, "the pulse is a very uncertain guide"—"*fallacissima res.*" In drawing conclusions from the pulse, bodily organization, period of life, time of day, mental agitation, &c. should be taken into the account; and the prevailing diathesis should never be overlooked. To show the importance of attention to some of these items, that accurate observer, Dr. Heberden, remarks, "A child of two years will die of an inflammatory fever, though the artery beats only 144 times in a minute; and I have seen one of four years recover from a fever, in which it beat 156. But in adults ill of an inflammatory fever, the danger is generally not very great where the beats are *lower* than 100; 120 shows the beginning of danger, and they seldom exceed this number unattended with deliriousness, and where the patient does not die. There are two exceptions to this observation. The first is that before some critical swelling or deposit of matter begins to show itself in fevers, the pulse will be so rapid and indistinct as hardly to admit of being counted ; but I have seen it certainly not less than 150, and yet the patient has recovered. Acute rheumatisms afford a second exception, in which the pulse will often beat above 120 times a minute without any kind of danger."

The pulse, in connection with other symptoms and circumstances, is a very important index of the state of disease, yet the pulse is by no means a certain guide in any, and without a due consideration of concomitant symptoms may greatly mislead. There are many anomalies respecting it. The conclusion, therefore, that "*a frequent pulse*," i. e. over 100, 110, or 115, "*always denotes the addition of irritation to exhaustion*," is probably too limited a conclusion to accord with the observation and experience of most practitioners. In pneumonia more especially, if there be much pain, the pulse is usually frequent, and it is believed there is hardly an experienced medical man who has not found benefit from the use of antiphlogistic and depleting measures in those cases. At the commencement of rosalia, and, also, of variola, which diseases are very nearly allied to each other in some of their essential characters, it must be admitted by every practitioner at all conversant with both, the pulse is usually extremely frequent, and an antiphlogistic course is universally admitted in the latter, and by many in the former. By venesection in such cases, the pulse is ordinarily reduced in frequency. Dr. Rush, in fact, in many cases resorted to bleeding, the most important antiphlogistic agent, "to reduce the uncommon frequency of the pulse." In the fever of 1794, by the abstraction of ten ounces of blood he reduced the pulse of a young lady from 176 to 140 beats a minute, "in a very few minutes." In violent cases of puerperal fever the pulse is uniformly rapid, and not unfrequently is brought to a healthy beat by depletion. In 1830, by venesection, calomel, cathartics, and other antiphlogistic measures, in a case of this kind, I reduced the pulse from 136 to less than 100 strokes a minute in twenty-four hours, and, in a few days, cured my patient. Would a supporting course of medication have been equally successful ? By no parity of reasoning can I bring myself to believe it would. Gastric and enteritic inflammation is commonly attended by a frequent pulse, which is usually *small* and *hard*. In these cases, both the frequency and hardness are obviated with more certainty by appropriate bloodletting than by any other measure. These facts appear conclusively to demonstrate that frequency of pulse does not "*always denote the addition of irritation to exhaustion*." Frequency of pulse certainly occurs in many cases of phlogosis, and Good even considers it one of the pathognomonic symptoms of *cauma*.

The epithets *hard*, *soft*, *wirey*, *&c.* applied to the pulse are well enough, and, indeed, they are of much use to a good practitioner; but as they are commonly used, they convey no definite idea of the real character of the pulse to a third person. There being no standard of the degree of *hardness*, *softness*, *&c.* of the pulse from which to estimate with precision the real degree of these qualities, the conclusion in these particulars must depend upon the opinion of the observer, which in addition to the inevitable discrepancy in all human opinions, is exceedingly liable to be influenced by some theoretical speculation, so that but little reliance can be placed upon the decision on these points. Exceptions ought probably to be made in the most caumoid and typhoid cases, in which it would seem hardly possible for an intelligent man to deceive himself or others. In equivocal cases, it must by the candid be admitted, however humiliating the conclusions, that in reality the description of the character of the pulse in these particulars, as often conveys an idea of the physician's theory of disease as the true state of the patient's pulse. For instance, the ultra-phlebotomists always feel a *hard* or *wirey* pulse; and on the contrary, the ultra-stimulating class of physicians never feel such a pulse—with the former all is *entony*, with the latter *atony*.

I have thus insensibly extended my remarks on ulceration, suppuration, and on the pulse, not so much to justify the medication adopted in the unfortunate case of Miss Cooke, as to expose the fallacy of some recently assumed principles of pathology, and consequently the dangerous tendency of a certain medical practice resulting therefrom, which, if I am correctly informed, prevails to a considerable extent in the Eastern States, and is taught and inculcated with eclat at some highly respectable medical schools. A few years since, and bleeding, the Sampson for entonic or phlogistic action, and other minor reducing measures, were the fashionable curatives—now these means have to some extent, at least, been supplanted by the use of opium, quinine, capsicum and brandy, in almost all cases indiscriminately. By the community of imitators there has been exhibited a real medical summerset, much to the impediment of successful medication. "*Incidit in Scyllam, cupiens vitare Charybdim.*" Extremes are seldom points of truth. Successful medication depends entirely upon the suitable adaptation of the remedial measures to the existing abnormal state of the system. Each case of disease requires its appropriate remedies. There is no catholicon or panacea—no class of medicinal agents which can be made to meet the requirements of every disease at any time. The idea is an absurdity. The diathesis prevailing, to be sure, does during certain epidemic periods appear to clothe every disease with a similar and peculiar livery. In malarious districts, too, all diseases are apt to ape the endemic of those districts, especially if they continue any considerable length of time. These circumstances always in some degree influence the true or best method of cure to be adopted. But they do not change all diseases to *a unit*, nor do they make *one invariable mode of practice necessary or admissible.*

It is much to be regretted that the operation for empyema had not been performed in the case of Miss C. soon after there was found to be unequivocal symptoms of an accumulation of fluid within the cavity of the chest. The pain, anxiety, and trouble of the operation would in all probability have been more than compensated by the comfort it would have afforded her in the act of respiration, even had it not prolonged her life. But, it is more than all to be regretted that the phlogistic or inflammatory action had not been subdued by a timely and appropriate bloodletting at the commencement of the complaint, and subsequently have been more thoroughly combated by *narcotics*, *deobstruents* and *alteratives*. These measures, it is obvious, would have been better adapted to arrest that abnormal action which eventuated in ulceration and suppuration, that were the immediate causes of death in this instance, than the course of medication adopted.

[To be continued.]

BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, FEBRUARY 12, 1834.

At the commencement of a new volume of the Journal, it is a natural impulse to express our sincere thanks to those of our brethren who have so liberally contributed to our pages, and to congratulate our readers on the possession of so much valuable material for their practical use.

At the same time that we acknowledge these favors, we would urge on all our readers the necessity of writing, and that frequently and fully, for the benefit of the profession. We cannot help regarding this as an important part of the duty of a physician. To those who have been long in practice, and to those more especially who have retired from practice, this duty is most imperative. The available knowledge they have acquired in the course of a long term of active professional service, is a treasure which a good man will feel himself bound to use for the benefit of his fellows. It is a treasure, unless so employed, that is scarcely worth the having, and can contribute but in a slight degree to the happiness of the proprietor. "A man's life consisteth not in the abundance of the things which he possesseth," but in the use he makes of his possessions. Be it money, or power, or genius, or knowledge, or opportunities, it is not the amount a man has, for which he is rewarded, but the manner in which he *uses* that portion that has fallen to his share; and the physician who retires from active duty, and keeps to himself the knowledge gained by his experience, is not like the rich man who employs his capital in ways that lead to the employment and improvement of his fellow-men, but like the miser who hoards up his wealth in an iron chest. He is like the man gifted with a great mind, who allows his intellect to perish for want of energy and action; or like him, who, surrounded with opportunities for moral cultivation, allows them all to remain unimproved, and rests satisfied with the consciousness that he possesses them. The comparison is indeed not flattering, but it is true. He who hides his light under a bushel, fulfils not the purposes for which that light was given him. While he lives, knowledge that might save many a life and make glad many a heart, is locked up in his own mind; and when he dies, it dies with him. And yet how slight an effort would have spread out on the pages of medical record, facts and observations, the result of a life of close and laborious practice, which might have saved hundreds, and among them perhaps some of his own progeny, from protracted suffering, or even an early grave.

Most of those whose case we allude to, have doubtless some reason which they deem sufficient to justify their silence. So has the miser for clasping his gold, and the man of genius for being satisfied with his powers. Let each pass his own reasons in review before him, and he will find they will none of them bear a rigid scrutiny. We would gladly advert to each of those considerations, some one or other of which usually determines a medical man to keep the result of his experience to himself; but our limits must deter us from such an undertaking. There is *one*, however, which has been so often given by our brethren in the country in the course of our communications with them, that a single allusion to it may perhaps be excusable. This most common plea is, that not being in the habit of writing, the observer scarcely feels confidence in his powers to communicate his remarks in a clear and handsome manner. If gentlemen will examine this reason in connection with the comparisons drawn above, they will scarcely be satisfied with its soundness. Besides, the habit of writing *plainly* is easily acquired; and as for beauty of style, it is not expected in pieces of this description. So far as our Journal may be the proposed medium for circulating their remarks, we beg our readers to remember that it differs essentially from the heavy quarterlies, where labored essays and reviews are expected. Ours is a periodical of a lighter character. It is indeed a *medical newspaper*. If it were in an open sheet, few would think of the obstacle in question. Neither ought they be deterred because it is folded into an 8vo. for the sole purpose of being preserved in a more compact and convenient volume.

It is also natural at this time to look about us, to see wherein we may so alter and amend our hebdomadary as to make it more acceptable and useful to the profession. But we are frank to confess that we cannot find wherein any practicable alteration is expedient. Of the *usefulness* of the work we can judge for ourselves, and it would be great injustice to the many and distinguished contributors, with whose papers we have been favored, did we not express our conviction that, in a comfortable measure, the design of making the Journal a *truly practical* work—one that will avail at the bed-side of the sick—has been fulfilled. Of the *acceptability* of the work to the profession, we can only judge by the expressions of satisfaction that are coming to us almost daily. We have reason, therefore, to be satisfied both with the measure of usefulness our courier is accomplishing, and also with the reception it meets with among our brethren, and no alteration of consequence is contemplated in the present volume.

It shall be our renewed endeavor to maintain the character of this work; and we now repeat our solicitations to gentlemen in actual practice, and to those who have hoarded their stores of knowledge gained by such practice, to pour their treasures into our pages, that each talent may become ten talents--each fact lead some of their brethren to combat disease with more confidence and more success. We have assurances that the several unfinished treatises now before the reader will be completed in the present volume. Professor Tully informs us he shall shortly renew his communications, that have been interrupted by unavoidable occurrences, and also gives us encouragement to expect further contributions from his experienced pen. Dr. Hooker's paper on Cardiac Diseases will be forthwith completed; and the remainder of Dr. Allen's valuable essay on Empyema is in preparation. We have also the promise of a meteorological diary kept at Fort Independence, in our harbor, by Dr. Brereton, which we shall publish once a month. The table for January has been furnished with great punctuality, and is inserted in the present number. Our friends Senex and W. are still laboring for our readers. It is also confidently anticipated that the favors of *all* our correspondents will be continued; and with these and such additional contributors as will doubtless rise up, together with the fresh energies of a young and enterprising publisher, we trust the present volume will at least support the credit which the Journal has already acquired with the members of the profession.

The list of subscribers has gradually increased during the last year, but it does not yet embrace half those for whom we should be most happy to labor; and we would barely suggest to each one who receives the Journal, the propriety of his exerting his influence to make it known to one or two of his medical friends who are perhaps ignorant of its existence. By a slight effort of this kind, on the part of our friends, the subscription might be doubled with the greatest ease; and as the number of contributors to a work of this kind always bears a certain relation to the number of its subscribers, so also must, of consequence, its intrinsic value.

NEW REGULATION RESPECTING MEDICAL DEGREES AT HARVARD UNIVERSITY.

Among the conditions for a degree of Doctor in Medicine in Harvard University, it has been heretofore required that the candidate shall have attended two full courses of lectures at the Massachusetts Medical College in this city. At a meeting of the overseers on Thursday last it was voted, that, if any candidate shall have attended one course at any other incorporated medical school or college, that course may supersede one of the two required by the previous rule. This is a measure of proper courtesy to other Institutions, and obvious justice to medical students, who will hereafter be able to avail of the privileges offered at different places, without the expense, and, frequently, delay, to which many were subjected under the former regulations; at the same time that it will probably tend to increase, rather than diminish, the number of those who seek their medical honors at this ancient University.

WARNING AGAINST FORMING HASTY OPINIONS.

A case was not long since submitted to the Academy of Sciences at Paris, in which crude quicksilver was said to have been found an antidote to lead. A young man being troubled by colic, swallowed four bullets in the hope of obtaining relief. Finding that the remedy had only aggravated his sufferings, he applied to a surgeon, who administered three and a half pounds of crude mercury. Some hours after the metal was swallowed, nausea and vomiting were produced. By means of two purgatives the quicksilver was brought away, and with it appeared a dark-colored powder of metallic character. There remained in the body only an ounce and a half of mercury. The analysis made of the powder at Avignon, gave about fourteen grammes of lead. On hearing this account, the Academy appointed two commissioners, Messrs. Robiquet and Larrey, to perform a similar experiment with the same substances, out of the body. The result of this experiment, which continued twenty days, was the solution of a third by weight of a ball, immersed in a proportionate quantity of mercury and a small quantity of water. M. Larrey likewise submitted to the action of mercury a ball enclosed in the substance of an amputated leg: this experiment was continued three weeks, but without producing any sensible effect on the surface of the ball.

The reporter therefore concluded that the balls had not been dissolved, and that they still remained, with the loss of a few ounces in weight, in the body of the subject, unless he had voided them by stool. This conclusion was soon verified by the death of the patient, who, according to a letter written by a member of the Commission of Civil Hospitals at Avignon, subsequently to the epoch at which M. Larrey wrote his report, died soon after, and in whose small intestines were found the four balls, without any sensible alteration in size.

RECORD OF METEOROLOGICAL OBSERVATIONS FOR JANUARY.

1834. January.	THERMOMETER.			Winds.	Appearances of the Atmosphere.	Weather.	Rain in Inches.	Moon's Phases.	Remarks.
	Minimum.	Maximum.	Mean.						
Wed. 1.	33.50	38.00	35.75	N W	Cumuli.	Clear.			Fine day.
Thur. 2.	25.00	35.00	30.00	S E—E	Cirro-cumulo-stratus.	Rain.		☾	at 11h. 26' A M—and Hail.
Frid. 3.	23.50	28.50	24.75	N W	Cirro-cumuli.	Clear.			Ther. 21° at 9 P M—High winds.
Sat. 4.	8.50	18.50	13.50	N W	Cumuli.	Clear.			
Sun. 5.	13.00	18.00	15.50	N E	Cirro-cumulo-stratus.	Snow.			
Mon. 6.	10.50	22.50	16.50	N W	Cirro-cumulo-stratus.	Cloudy.			
Tues. 7.	11.50	22.00	16.75	N W	Cirrus.	Clear.			Slight snow last night.
Wed. 8.	19.50	35.00	27.25	S W	Cirro-cumuli.	Clear.			Rain-gage procured.
Thur. 9.	20.00	35.00	27.50	S W	Cirri.	Clear.		○	at 6h. 26' P M.
Frid. 10.	26.00	37.50	31.25	S E	Cirro-cumulo-stratus.	Cloudy.			
Sat. 11.	21.50	31.00	26.25	N E	Cirro-cumulo-stratus.	Snow.	} .35		
Sun. 12.	30.00	31.00	30.50	S E—S W	Cirro-cumulo-stratus.	Rain.			and Sleet.
Mon. 13.	26.00	28.50	27.25	S E	Cirri.	Clear.			
Tues. 14.	19.00	32.00	25.50	S W	Cirri.	Clear.			
Wed. 15.	16.00	20.00	18.00	N	Fair.	Clear.			Cloudless.
Thur. 16.	13.00	29.00	21.00	S W	Cirro-stratus.	Clear.			Rather cloudy.
Frid. 17.	33.50	48.00	40.75	S W	Cirro-cumulo-stratus.	Rain.	.05	☽	at 9h. 58' P M. Thaw.
Sat. 18.	39.50	52.50	46.00	W	Cumulo-stratus.	Clear.			Occasionally cloudy.
Sun. 19.	33.50	39.50	36.50	N E	Cirro-cumulo-stratus.	Cloudy.			
Mon. 20.	33.50	43.00	36.50	N—N W	Cirro-cumulo-stratus.	Cloudy.			Stratus, A M. Ther. 30° at 9 P M.
Tues. 21.	14.00	18.50	16.25	N W	Cirri.	Clear.			High wind.
Wed. 22.	5.50	14.00	11.75	N W	Fair.	Clear.			Ther. at 9 P M, 18°. High wind.
Thur. 23.	2.00	10.00	6.00	N W	Cirri.	Clear.			
Frid. 24.	3.00	13.00	8.00	N W	Cirrus.	Clear.			
Sat. 25.	10.00	21.00	15.50	N E	Cirro-cumulo-stratus.	Cloudy.		●	at 5h. 28'.
Sun. 26.	26.50	34.50	30.50	N E—N W	Cirro-cumulo-stratus.	Snow.	.70		N W, P M. Snow reduced.
Mon. 27.	18.00	27.00	22.50	W	Cumuli.	Clear.			
Tues. 28.	13.00	31.50	22.25	N W	Cumulo-stratus.	Cloudy.			
Wed. 29.	17.00	24.00	20.50	N	Cirri.	Clear.			
Thur. 30.	17.00	40.00	28.50	S W	Cirro-cumulo-stratus.	Cloudy.			
Frid. 31.	26.00	36.50	31.25	E	Cumulo-stratus.	Cloudy.		☾	at 8h. 30' P M. Fog or stratus A M.
Aggregate.	19.629	29.50	24.516	N W	Cirro-cumulo-stratus, 12.	Cloudy.	1.10		

Result.—Mean temperature for the month. 24.516. Maximum on the 18th, 52.50. Minimum on the 23d, 2.00. Range of thermometer, 50.50. Prevailing wind, N W. Prevailing atmosphere, cirro-cumulo-stratus. Rain observed in inches, 1.10.

Explanatory Remarks.—The minima observations are generally indicated at, or before sunrise; the maxima between 2 and 3 o'clock P. M. The former are all noted, in the column, at the time mentioned; but, sometimes, on *approaching cold*, it differs, and is then recorded in the column of "Remarks," and assists in forming the *daily mean*. Montandon's metallic self-registering thermometer is used. J. A. BRERETON.

Fort Independence, Mass. February 1, 1834.

NOTICE.

THE Copartnership which has existed between the subscribers under the firm of D. CLAPP, JR. & CO. was dissolved on the 6th inst. by its own limitation. The accounts of the firm will be settled by either of the former partners.

JOHN COTTON,
D. CLAPP, JR.

The subscriber will continue the business of printing and publishing lately carried on by the above firm, and respectfully solicits from the former friends and customers of the establishment a continuance of their favors.

By this arrangement he has become the sole Proprietor and Publisher of the Medical Journal, with which he has been connected for several years past. His efforts will be continued to render it acceptable to the medical profession, by securing to it able editorial management and the assistance of contributors in various parts of the country, as well as by constant attention to its typographical execution and its safe and punctual delivery to subscribers. The gentlemen who have recently assisted in extending its circulation among their medical friends, and who have also furnished valuable aid in writing for its pages—particularly the esteemed authors of the papers on "Medical Improvement" and the Essay on "Auscultation"—will please accept the thanks of the late firm for their exertions, a continuance of which will increase the gratitude of the present publisher. It is desirable that the productions of these and other able pens should be still more widely circulated among the Faculty. The list of subscribers has never yet been so large as it ought to be, nor so large as it might be made by some little exertion on the part of its present readers. A work of this kind, without advertising patronage, requires a larger number for its existence than one which can depend upon an income from that source. It is the intention of the publisher to spare no exertion of his own to render the work in every respect worthy of a more extended circulation; and he trusts that those who have it in their power, and who feel an interest in the success of the Journal and in the medical literature of their country, will contribute their share to increase the number of its readers and the weight of its influence. There are indeed indications that efforts of this kind will be more generally prevalent among them. Assurances have recently been received from the Faculty of one of the most enlightened and scientific cities of the North, that they have pledged themselves to do their part towards "keeping up a weekly Medical Journal in New England"; and if a similar promise, accompanied, as in the instance alluded to, by a corresponding vigorous and successful effort, could be made in the other large towns of New England, this Journal would stand on a more solid foundation than ever—its character would be still more highly elevated, and its usefulness extended. Assistance of the same kind has also been received, to some extent, from portions of the Western and Southern States; and as the Journal is not a publication devoted to local subjects, it is hoped that the design thus manifested may be there, as well as elsewhere, more extensively and successfully embraced, to the mutual advantage of publisher and readers.

The punctuality of those subscribers who have uniformly adhered to the terms of subscription, entitles them to the thanks of the publisher. These constitute a large portion of those who receive the Journal; but the number is not small of those who have allowed several years successively to pass without making any remittance, or offering in any manner an equivalent for the work they have received. Such are again reminded of their delinquency, and are informed that their speedy attention is now particularly required for the early settlement of the accounts of the late firm. Those who are indebted for the last year only, will also confer a favor by forwarding, as soon as convenient, the amount due.

D. CLAPP, JR.

The Index to the ninth volume will be forwarded to subscribers with an early number.

COPLAND'S MEDICAL DICTIONARY.—Subscriptions are received by the Publisher of the Medical Journal for this valuable work. Terms, $5,00, in advance. Part I. just published.—Also, for the American edition of the London Medico-Chirurgical Review, at the same price for each year, and on the same terms of payment.

THE BOSTON MEDICAL AND SURGICAL JOURNAL is published every Wednesday, by D. CLAPP, JR. at 184 Washington Street, corner of Franklin Street, to whom all communications must be addressed, *post-paid*. It is also published in Monthly Parts, on the 1st of every month, each Part containing the weekly numbers of the preceding month, stitched in a cover.—Price $3,00 a year in advance, $3,50 after three months, and $4,00 if not paid within the year.—Every seventh copy, *gratis*.—Postage the same as for a newspaper.